

Canadian Journal of Physics

Contents
Volume 82, 2004

Revue canadienne de physique

Sommaire
Volume 82, 2004

January / janvier

ARTICLES / ARTICLES

M.R. Sarkar	Towards the consistent histories approach to quantum mechanics	1
D.G.C. McKeon and G.N. Ord	Time reversal and a stochastic model of the Dirac equation in an electromagnetic field	19
H. Hernández and L.A. Núñez	Nonlocal equation of state in anisotropic static fluid spheres in general relativity	29
T. Krüger	An attempt to close the Einstein–Podolsky–Rosen debate	53
A. Boumali	Particule de spin 0 dans un potentiel d’Aharonov–Bohm	67
E. Ech-chamikh, I. Aboudiab, M. Azizan, A. Essafti, et Y. Ijdiyaou	Détermination du coefficient d’absorption des rayons X à partir des mesures de réflectométrie X	75

February / février

ARTICLES / ARTICLES

B. Lu and W.A. van Wijngaarden	Bose–Einstein condensation in a QUIC trap	81
U.D. Jentschura and G.W.F. Drake	The $2S_{1/2}$ – $2P_{1/2}$ Lamb shift in He^+	103
F.-H. Liu	Azimuthal distribution and transverse flow in high-energy nucleus–nucleus collisions	109
K.L. Yao, X.W. Liu, Q.M. Liu, G.Y. Sun, and Z.L. Liu	Density matrix renormalization group studies on the stability of quasi-1-D undoped and doped polymer ferromagnets	119
H.A. Attia	Unsteady Hartmann flow with heat transfer of a viscoelastic fluid considering the Hall effect	127
M.I. Hussein and A.-K. Hamid	Radiation characteristics of N axially slotted antenna on a lossy dielectric-coated elliptic cylinder	141
S.M.M. El-Kabeir	Radiative effects on forced convection flows in micropolar fluids with variable viscosity	151

March / mars

ARTICLES / ARTICLES

A. Hirose, D.Z. Liu, and S. Livingstone	Effects of charge non-neutrality and finite β on the electron temperature gradient modes in Tokamaks	167
H. Wojciechowski	Coulomb amplitude representation and nuclear diffraction and refraction	177
S. Bougouffa and A. Kamli	Analysis of electron–atom collision processes involving strong coupling	185
P. Mohazzabi and J.C. Fields	High-altitude projectile motion	197
I.I. Guseinov and B.A. Mamedov	Unified treatment of overlap integrals with integer and noninteger n Slater-type orbitals using translational and rotational transformations for spherical harmonics	205
M. Sabbane and M. Tij	Analyse du flux de Poiseuille bidimensionnel via l’équation de Boltzmann	213
N.L. Singh and M.S. Gadkari	Measurement and analysis of excitation functions for alpha-particle-induced reactions in rhenium	227
M. Payami	Stabilized jellium model and structural relaxation effects on the fragmentation energies of ionized silver clusters	239

April / avril

ARTICLES / ARTICLES

U.D. Jentschura and F. Fahrbach Physics of skiing: The ideal-carving equation and its applications	249
M. El-Nadi, A. Abdelsalam, E.A. Shaat, N. Ali Mossa, Z. Abou Moussa, S. Kamel, N. Rashed, W. Osman, and M.E. Hafiz Spallation of ^{32}S ions at ultra-relativistic energies in nuclear emulsion	263
G. El Machtooub Channel-specific dielectronic recombination of Ge(XXXII), Se(XXXIV), and Kr(XXXVI)	277
J.R. Cahoon The first coordination number for liquid metals	291
M.B. Matchiane, F. Ghmari et M.S. Sifaoui Correction de l'approximation de Kirchhoff par la méthode intégrale reformulée : cas des réflectivités de surfaces sinusoïdales	303
A. Ulug, M. Karakaplan, and B. Ulug Clustering in some randomly occupied two- and three-dimensional lattices	323

May / mai

ARTICLES / ARTICLES

S.M. Hamasha, A.S. Shlyaptseva, and U.I. Safronova E1, E2, M1, and M2 transitions in the nickel isoelectronic sequence	331
S. Zhou Solid-liquid transition of charge-stabilized colloidal dispersions: a single-component structure-function approach	357
R. Oussaid and B. Haraoubia Longitudinal- and transverse-operators formalism for chiral media: Application to guided structures filled with chiral materials	367
Ö. Kabadayı Calculation of the range of medium-energy F, Cs, and Ga ions in silicon carbide	379
K. Le Bris, C.K. Assi, and J.-M. Gagné Spectroscopic investigation of sensitized-Cs ($6^2\text{P}_{3/2}$ - $6^2\text{P}_{1/2}$) laser retrofluorescence in a pure optically thick vapour near a dissipative surface	387
D.G.C. McKeon Operator regularization and noncommutative Chern-Simons theory	403

June / juin

ARTICLES / ARTICLES

E.J. Llewellyn, N.D. Lloyd, D.A. Degenstein, R.L. Gattinger, S.V. Petelina, A.E. Bourassa, J.T. Wiensz, E.V. Ivanov, I.C. McDade, B.H. Solheim, J.C. McConnell, C.S. Haley, C. von Savigny, C.E. Sioris, C.A. McLinden, E. Griffioen, J. Kaminski, W.F.J. Evans, E. Puckrin, K. Strong, V. Wehrle, R.H. Hum, D.J.W. Kendall, J. Matsushita, D.P. Murtagh, S. Brohede, J. Stegman, G. Witt, G. Barnes, W.F. Payne, L. Piché, K. Smith, G. Warshaw, D.-L. Deslauriers, P. Marchand, E.H. Richardson, R.A. King, I. Wevers, W. McCreath, E. Kyrölä, L. Oikarinen, G.W. Leppelmeier, H. Auvinen, G. Mégie, A. Hauchecorne, F. Lefèvre, J. de La Nöe, P. Ricaud, U. Frisk, F. Sjöberg, F. von Schéele, and L. Nordh The OSIRIS instrument on the Odin spacecraft	411
Feng Xie, Greg Reid, and Seeram Valluri A numerical method for one-dimensional action functionals of photonic band-gap structures	423
John R. de Bruyn and Amanda M. Walsh Penetration of spheres into loose granular media	439
Ahmed A. Afify The effect of radiation on free convective flow and mass transfer past a vertical isothermal cone surface with chemical reaction in the presence of a transverse magnetic field	447
B. Talukdar, S. Ghosh, and J. Shamanna Canonical structure of the coupled Korteweg-de Vries equations	459
A. Raouak, D. Saifaoui et A. Dezairi Chaos dynamique des particules relativistes accélérées dans un paquet d'ondes électrostatiques	467
X. Liu, D. Poitras, Y. Tao, and C. Py Optically pumped lasing from organic microcavity	481

NOTE / NOTE

Tetsuya Yamamoto and Nobuo Ishii Large-area plasma excitation in densely arrayed radial line slot antennas using TE_{11} rotating mode

489

July / juillet

TUTORIAL / ARTICLE DIDACTIQUE

A. Hirose, H. Li, S. Livingstone, and X.F. Lu On diffraction of electromagnetic waves by an aperture in a conducting screen

495

ARTICLES / ARTICLES

D.A. Degenstein, E.J. Llewellyn, and N.D. Lloyd Tomographic retrieval of the oxygen infrared atmospheric band with the OSIRIS infrared imager

Z. Chen and A.Z. Msezane Coefficients of radial integral in the electrostatic interaction and their applications

N. Zheng, Z. Li, D. Ma, T. Zhou, and J. Fan Theoretical study of energy levels of atomic Ga

E.M. Abo-Eldahab and A.M. Salem MHD combined convection flow of a non-Newtonian power-law fluid due to a rotating cone or disk

D.G.C. McKeon Antisymmetric tensor gauge fields on S_4

A. Nanayakkara A new way of finding locations of zeros of wave functions

S. Ghosh, J. Shamanna, and B. Talukdar Inequivalent Lagrangians for the damped harmonic oscillator

U. Kulshreshtha and D.S. Kulshreshtha The front-form Hamiltonian and BRST formulations of the Nielsen–Olesen model in the broken symmetry phase

501

517

523

531

541

549

561

569

August / août

TUTORIAL / ARTICLE DIDACTIQUE

J.-F. Wang, C.-J. Zhang, and J.-F. Hu Correlativity and the origin of the T^2 difference between the Bloch–Grüneisen law and the Debye law

585

ARTICLES / ARTICLES

P. Dobias and J.C. Samson Nonlinear instabilities in magnetized plasmas: a geometrical treatment

J.L.V. Lewandowski Optimized loading for particle-in-cell gyrokinetic simulations

M.H. Naderi, M. Soltanolkotabi, and R. Roknizadeh On a family of photon-added deformed coherent states associated with two-parameter deformed boson oscillator algebra

S.H. Patil and Y.P. Varshni A simple description of the spectra of confined hydrogen, helium, and lithium

M. El Amrani et A. Safouane Restauration d'images ultrasonores en contrôle non destructif

593

609

623

647

661

September / septembre

ARTICLES / ARTICLES

M.E. Carrington, T. Fugleberg, D. Pickering, and M.H. Thoma Dielectric functions and dispersion relations of ultra-relativistic plasmas with collisions

Y. Yao, M. Schlesinger, and G.W.F. Drake A multiscale finite-element method for solving rough-surface elastic-contact problems

E.F. Elshehawey, N.T. Eldabe, Elsayed M.E. Elbarbary, and Nasser S. Elgazery Chebyshev finite-difference method for the effects of Hall and ion-slip currents on magneto-hydrodynamic flow with variable thermal conductivity

L.M. García-Cruz, A. Rubio-Ponce, A.E. García, and R. Baquero Detailed analysis of magnetism in Ru monolayers

671

679

701

717

Johann E. Junginger and Zoran D. Popovic	An experimental investigation of the influence of an electrostatic potential on electron mass as predicted by Weber's force law	731
D.G.C. McKeon	The renormalization-group improved effective potential in the Wess-Zumino model	737
U.I. Safranova and M.S. Safranova	Relativistic many-body calculations of energies for doubly-excited $1s2/2l$ and $1s3/3l$ states in Li-like ions	743

October / octobre

TUTORIAL / ARTICLE DIDACTIQUE

R.D. Mota, M.A. Xicoténcatl, and V.D. Granados	Two-dimensional isotropic harmonic oscillator approach to classical and quantum Stokes parameters	767
---	---	-----

ARTICLES / ARTICLES

F.S. Ibrahim, I.A. Hassanien, and A.A. Bakr	Unsteady magnetohydrodynamic micropolar fluid flow and heat transfer over a vertical porous plate through a porous medium in the presence of thermal and mass diffusion with a constant heat source	775
E.T. Jensen and M.R.A. Shegelski	The motion of curling rocks: Experimental investigation and semi-phenomenological description	791
Adel M. El-Shemí	Multicharged Xe^{i+} ions formed after de-excitation of inner-shell vacancies in Xe atom	811
I.I. Guseinov	Unified treatment of electronic attraction, electric field, and electric-field gradient multicenter integrals of screened and nonscreened Coulomb potentials using overlap integrals for Slater orbitals	819
S. Pellerin et J. Chapelle	Étude d'une décharge supersonique applicable au traitement des effluents gazeux	827

NOTE / NOTE

Usha Kulshreshtha and D.S. Kulshreshtha	Instant-form Hamiltonian and Becchi-Rouet-Stora-Tyutin formulations of the Nielsen-Olesen model in the broken symmetry phase	843
--	--	-----

November / novembre

TUTORIAL / ARTICLE DIDACTIQUE

William E. Baylis	Relativity in introductory physics	853
--------------------------	------------------------------------	-----

ARTICLES / ARTICLES

Mark R.A. Shegelski, Glen L. Goodvin, Rebecca Booth, Peter Bagnall, and Matthew Reid	Exact normal forces and trajectories for a rotating tripod sliding on a smooth surface	875
P. Moretti, M. Lantieri, and L. Cianchi	Random walks and related diffusion equations	891
S. Cauchi, A. Vorozcova, M. Weel, S. Beattie, O. Gagnon, and A. Kumarakrishnan	Absorption spectroscopy of trapped rubidium atoms	905
S.H. Patil and Y.P. Varshni	Hydrogenic system in an off-centre confining oscillator potential	917
P. Neill, C. Harris, A.S. Safranova, S. Hamasha, S. Hansen, U.I. Safranova, and P. Beiersdorfer	The study of X-ray M -shell spectra of W ions from the Lawrence Livermore National Laboratory Electron Beam Ion Trap	931
V.G. Pal'chikov, V.P. Yakovlev, and Yu.L. Sokolov	Atomic state interference with fast hydrogen-like helium	943
Young-Sea Huang and Kang-Hao Lu	Formulation of the classical and the relativistic Doppler effect by a systematic method	957
Y. Wang, T. Hayat, and K. Hutter	Magnetohydrodynamic flows of an Oldroyd 8-constant fluid in a porous medium	965

December / décembre**REVIEW / SYNTHÈSE**

Elena Maeva, Inna Severina, Sergiy Bondarenko, Gilbert Chapman, Brian O'Neill, Fedar Severin, and Roman Gr. Maev Acoustical methods for the investigation of adhesively bonded structures: A review **981**

ARTICLES / ARTICLES

T.J. Hayes, S.R. Valluri, and L. Mansinha Gravitational effects from earthquakes **1027**

J.W. Kaiser, C. von Savigny, K.-U. Eichmann, S. Noël, H. Bovensmann, and J.P. Burrows Satellite-pointing retrieval from atmospheric limb-scattering of solar UV-B radiation **1041**

K. Siakavara, K. Koukouliantzas, and P. Kouraklis Power loss and radiated field from microwave microstrip floating lines in resonance **1053**

Asiri Nanayakkara Zeros of the wave functions of general polynomial potentials **1067**

Michael O. Steinitz, G. Shane MacLeod, David A. Pink, Bonnie Quinn, and Gillian L. Ryan Magnetoelasticity and the spin rotation transition in cobalt **1077**

V.J. Menon and Ritesh Kumar Dubey On the $\epsilon \rightarrow 0$ limit of the Lippmann-Schwinger-Low states **1085**

Michael O. Steinitz, David A. Pink, J. Patrick Clancy, A. Nicole MacDonald, and Ian Swainson Sodium nitrate – a difficult discontinuous phase transition **1097**

G.M. Moatimid Nonlinear instability of two dielectric viscoelastic fluids **1109**

Author Index / Index des auteurs **AI-1**

Subject Classification / Classification thématique **SC-1**

Contents / Sommaire **C-1**



